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SCHEDULING OPTIONS UTILIZED IN DEPARTMENTS OF NURSING  
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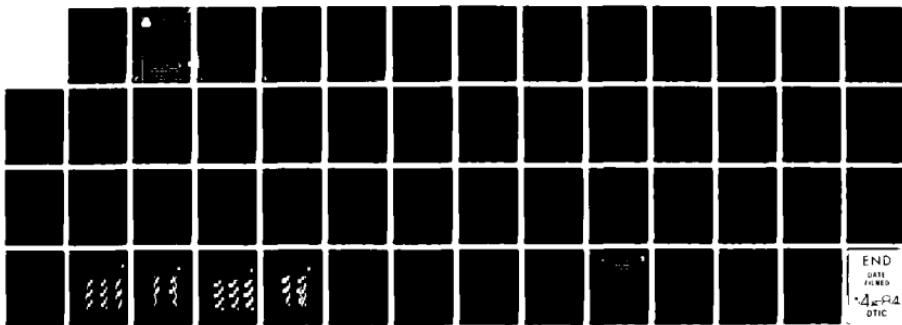
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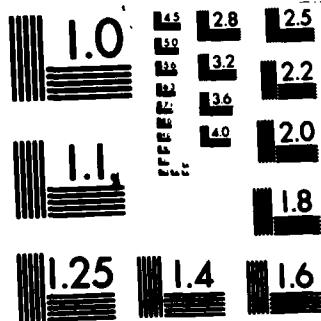
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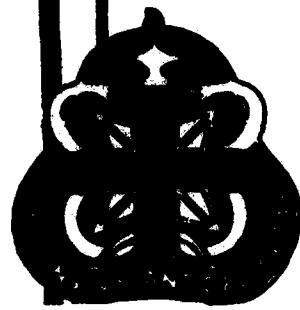
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# United States Army Health Care Studies

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SCHEDULING OPTIONS UTILIZED

IN

DEPARTMENTS OF NURSING

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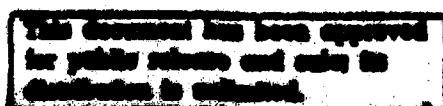
LTC A. J. Frelin, ANC, USA

FINAL REPORT # 83-003

SEPTEMBER 1983

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Study was assigned as part of AMEDD Study Program FY 83. An extensive literature review was accomplished to include summarization and critique of various reported methodologies. Examples of non-traditional scheduling options were described, evaluated for usefulness in the AMEDD and illustrated using "model nursing units" schedules. Conclusions reached were: (1) that there are multiple scheduling options cited in the literature which are reported to increase staff satisfaction without impacting negatively on existing quality of		

nursing care; (2) that many of the options available can be tested within the AMEDD system without structural change in personnel management; and (3) civilian personnel policies do not preclude trial and/or implementation with the AMEDD. The investigator recommends trial implementation within the AMEDD and results reported for possible generalization.

## DEFINITIONS

For the purpose of this monograph, the following definitions apply:

Staffing - the overall issues of numbers, types, distribution, and working hours of nursing personnel

Staffing Patterns - specific numbers, types and/or distributions of nursing personnel; these most commonly refer to those required to provide recognized services

Scheduling - arrangements or configurations of the working hours of nursing personnel

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## SCHEDULING OPTIONS UTILIZED IN DEPARTMENTS OF NURSING

### 1. INTRODUCTION.

a. Problem. The problem of nurse staffing is ongoing and universal. It actually encompasses two major issues: (1) how many nursing personnel are required to provide nursing care to a defined patient population, and (2) how to distribute these numbers to maximize continuity and quality of service while providing a work schedule acceptable to staff members. The implementation of recognized patient classification systems is used to answer the question of how many staff members are needed to provide required services. However, with the present perceived nursing shortage and the dissatisfaction of nurses with conventional scheduling methods, a need to evaluate innovative scheduling techniques has been recognized.

b. Purpose. The purpose of this monograph is to investigate, through an in-depth literature review and critique, plausible scheduling techniques which could recognize staff preferences, increase morale, job satisfaction and staff retention, and at the same time be cost-effective. Also contained is an evaluation of these scheduling systems for applicability by military and civilian positions within Departments of Nursing in the Army Medical Department (AMEDD).

c. Background. The issues surrounding the scheduling of nursing personnel have become increasingly visible. With an escalating perception of nursing shortages and with nurses increasing demands to take a more active part in decision-making about their job setting, attempts are being made to increase nurses' satisfaction in the work place. When queried about job satisfaction, primary among the dissatisfiers listed (especially among staff nurses) were scheduling methodologies and shift work. Testimony given at the National Commission on Nursing hearings and the Institute of Medicine's (IOM) Open Meeting

(1981), as well as considerable anecdotal evidence, attests to this widespread dissatisfaction and to the role that perceived scheduling inflexibility plays in the dissatisfaction. Further, in studies reported nationwide on the conditions associated with registered nurse employment, those of scheduling and shift rotation were found to be of major concern.

Wandelt, Hales, Merwin, Olsson, Pierce, and Widdowson (1980), in a study of conditions associated with registered nurse employment in Texas, reported that concern of shift rotation was the second most frequently mentioned undesirable aspect of nursing. The need for constant adjustments in personal life, in terms of an individual's own routine, as well as that of the family, was reported to cause notable difficulty. In a sample of 920 unemployed nurses nearly 50 percent indicated the unavailability of desired work schedules as their main reason for leaving active practice and 70 percent as the main reason for remaining away from practice. These findings have also been reported even as "back to work" movements are increasing during the current recession. Just over 30 percent of nonworking registered nurses (RNs) in Massachusetts ("New Study," 1983) cited scheduling as the main reason for leaving active practice, while 46 percent cited it as a reason to remain out of the work force. A survey in Jacksonville, Florida (Ginsberg, Patsy, Ostow, and Brann, 1980) reported similar results. In the the recent report of findings of a task force from the American Academy of Nursing, ("Nurse Task," 1981), which addresses positive aspects of attraction retention of professional nurses, flexible work schedules were found to be especially important. Staff nurses indicated that they "wanted very much to blend the professional and personal demands made on them and to minimize conflict between the two." Eight, 10, and 12 hour shifts or combinations have been used and staff nurses participated with the head nurse in schedule planning. The data suggested that individualization of work schedules was an important factor; it was also clear that efforts to

tailor hours of work to meet staff needs were viewed positively by those involved.

The Army Nurse Corps (ANC), and its civilian counterparts in the AMEDD, as a microcosm of the nursing profession, report scheduling and shift rotation also a major concern. In a study of factors affecting retention of civilian RNs in the AMEDD, McDonald (1982) found, in open-ended format concerning dissatisfactions, that only one item was consistently negatively monitored--that of rotating shifts. Additionally, in a survey of ANC officers throughout the AMEDD (Frelin, 1983), staffing and scheduling were the primary concern to a large segment of respondents; 77 percent considered them inadequate on their nursing units and in open-ended format, 44 percent said as head nurse they would address the problem of staffing and scheduling.

2. OBJECTIVES.

- a. To identify scheduling patterns reported in the literature which could increase staff satisfaction while not negatively impacting on existing quality of care within the AMEDD.
- b. To assess the requirements for implementation of these staffing patterns within the AMEDD.
- c. To evaluate the usability of each staffing pattern in the AMEDD.

3. STUDY QUESTIONS.

- a. What nontraditional scheduling systems are now in use that could increase staff satisfaction without negatively impacting on existing quality of care?
- b. What changes should be made in present scheduling methodologies to accommodate these patterns?
- c. Would present civilian personnel policies accommodate these systems?
- d. Given the information available, could these systems be implemented in the AMEDD?
- e. What variables, particular to the AMEDD, would have to be considered when implementing these systems?

#### 4. METHODOLOGY.

a. Data Collection. A literature search was conducted using the following sources: Defense and Technical Information Center (DTIC; Search #015738 and #015731), Defense Logistics Studies Information Exchange (DLSIE; Search #487-8-6842-82), the AMEDD Study Program; MEDLARS II (Search #6151643, #6150656, and #6150948), and the US Department of Health and Human Services (Search #0090737).

b. Data Analysis. Extensive literature review was accomplished. Additionally, sample schedules for a "model nursing unit" have been provided for those systems which appear most useful.

#### 5. RESULTS and DISCUSSION.

The sick always will require twenty-four-hour-a-day care, seven days a week, without regard for weekends, holidays or personal preferences. Although this is a fact of life, few student nurses are aware of what it entails--especially in regard to the actuality of working shifts. For a short period of time, many postgraduates will accept almost any schedule offered to them in order to work in an area and hospital of their choice. However, once the "honeymoon" is over, young nurses begin the search to find the "ideal" job that will offer their chosen specialty, acceptable hours, and ideal working conditions. Not surprisingly, shift work or scheduling are among the most frequently named reasons for discontent.

Margaret Sinclair Alivizatos

Discontent over scheduling of work is perhaps as old as nursing itself. The appearance of "innovative" or new workweek patterns has evolved recently from nurses' increased demands for participation in decisions regarding their working conditions. Despite the fact that nursing care is required, hospitals continue to experience difficulty in meeting these requirements. Staffing evening and night shifts adequately, giving staff two days off consecutively as well as weekends, late posting of schedules, excessive shift rotation are all among the complaints leveled by staff nurses.

The literature reviewed strongly suggests that whatever workweek configuration is tested (and all that will be discussed have great potential to increase

staff morale and job satisfaction) will owe its success or failure to two vital ingredients: (1) strong support from nursing administration, and (2) participation by the staff in all levels of planning and implementation. The most frequent scheduling systems reported in the literature were: (1) the 4-40 workweek, (2) the 7-70 workweek, (3) twelve-hour work schedules, (4) or some combination.

Each of the cited systems will be discussed separately and sample schedules will be presented for each. The model nursing unit was selected from data available within the AMEDD. It is a 40-48 bed unit (approximately) with eight registered nurses, five paraprofessionals (six active duty Army and six DAC). The head nurse, wardmaster, and ward clerk positions in the sample schedules, are maintained on the traditional 5-40 schedule to provide for overall smooth administrative functioning.

The 4-40 Workweek. Most frequently cited of the modified workweek options is the 4-40 schedule. This option modifies the traditional eight-hour day, five days a week scheduling design, to 10 hours a day with a four-day workweek. Those who favor this option generally cite the shift as a great improvement both in the staff's ability to provide quality care and in their job satisfaction and morale. Articles pertaining to this option have been appearing since the early 1970's and this pattern has been in continual use in some institutions for more than 15 years. The major advantages consistently cited are quality of care, time utilization, staff morale, and job satisfaction, while the main drawbacks center around bureaucratic requirements imposed on specific units rather than institution-wide. Often, they are adopted by only a segment of the staff. Overall, this could prove advantageous in the AMEDD since at least subjectively, the ability to experiment with various schedules within the constraints of civilian personnel and local union requirements is limited. The following examples are not exhaustive but were chosen to illustrate those most successfully reported.

Bauer (1971) reported implementation on a critical care unit. Requirements were that schedules be cyclic (repeated indefinitely), allow for every other weekend off, require no more than four shifts in a row with at least 14 hours between shifts, and provide a four-day weekend every six weeks. The shift schedule chosen was:

7:00 a.m. - 5:30 p.m.

1:00 p.m. - 11:30 p.m.

9:00 p.m. - 7:30 a.m.

This configuration was reported to be a success with the major advantages cited as shortened workweeks with longer weekends, the ability to project months ahead to plan other activities, and more time for care planning both individually and in team conference. Administratively there was a decrease in overtime, absenteeism, and personnel turnover. There were no reported disadvantages and no significant payroll changes required. The shift cycle was six weeks, two and one-half consecutive weeks of days, one and one-half weeks of evenings, and two weeks of nights.

More recently, utilizing the same basic technique (Shaw, 1978), reported a comprehensive pilot test of this schedule at a large Eastern hospital. All levels of staff participated on a voluntary basis (initially 24 of 31 staff members participated increasing to 29 of 31) as the project progressed. The objectives were to:

- (1) provide and enhance continuity
- (2) provide scheduled assigned time for effective patient teaching
- (3) provide opportunity to formulate individualized assessments and care plans
- (4) increase communications
- (5) increase available staff during peaks

- (6) decrease absenteeism and overtime
- (7) provide an atmosphere for professional growth
- (8) enhance staff morale

Shifts chosen for this project were:

7:00 a.m. - 5:30 p.m.

1:10 p.m. - 11:30 p.m.

10:30 p.m. - 9:00 a.m.

During the four month implementation period the following results were reported: "marked improvement" in areas of assessment, planning, and delivery of patient care as evidenced by quarterly evaluation by the Nursing Concurrent Audit Committee and by patient subjective evaluations; a perceived improvement by staff in their ability to provide care while receiving better time off; and a projected virtual elimination of overtime and no changes in absenteeism and incident reports.

Kent (1972) reported an interesting scheduling option on several units at a university hospital in the Northwest. Before the test, all staff worked the traditional eight hour day, five days per week; the schedule was prepared monthly and posted two weeks prior to the first of the month with no rotation of shifts. Most of the staff received two consecutive days off each week. Rarely were days off split and the staff did not work more than seven days in a row. The new schedule was: all full-time RN's, days and evenings, worked ten and one-half hours; paraprofessionals and all-night staff remained on conventional schedules as follows:

RN 7:00 a.m. - 5:30 p.m.

LPN 7:00 a.m. - 3:30 p.m.

RN 1:00 p.m. - 11:30 p.m.

LPN 2:30 p.m. - 11:00 p.m.

Holidays and vacations were converted to hours rather than days, i.e., if on a conventional schedule 12 vacation days per year were given; on a 10 hour shift, 96 hours were given. Objectives of the program were to:

- (1) increase quality of care through better, more constant assessment and planning
- (2) provide for more efficient planning of time spent both on and off duty
- (3) increase staff morale and job satisfaction

Reported findings showed little objective change in quality although there was a 10 percent increase in documented teaching. Subjectively, however, the staffs changed considerably in their perception that their work situation allowed them to give good care. Job satisfaction showed a "startling and gratifying change" in the staffs' belief that they could give good care (53 percent before, 95 percent after); have adequate time for discharge summaries, public health referrals, and teaching plans (43 percent to 71 percent); provide adequate counseling and teaching time (32 percent to 81 percent); provide continuity in carrying forward care plans (63 percent to 76 percent); and give adequate inter-shift reports (24 percent to 62 percent). In four months sick time decreased from .96 days per staff member per month to .34 and overtime decreased from seven hours per month to 1.8 (sick time for nonparticipants was relatively unchanged).

A third type of matrix was reported by Frasier (1972) and modified by Boyarski (1976). The latter system required splitting the staff into two work groups, one group working Tuesday, Wednesday, Saturday, Sunday, Monday, Thursday, and Friday with the other working the alternate days. Both systems used two 10-hour shifts with one part-time shift of five hours. Both systems were evaluated as being very successful; however, from an organizational point of view each required significant changes. The most important requirement was for a significant number of part-time positions, which could be difficult in the federal system. However, reluctance by the local Civilian Personnel Office (CPO) to consider part-time does not appear to have legislative impetus and in fact is covered by P.L. 95-437 (see Appendix G). Also, in the Boyarski system

the following other changes were made: overtime was redefined as over 10 hours per day or 40 hours per week, all full-time RNs were classified exempt, holiday pay was defined as ten hours regular pay plus eight hour holiday, hourly wages were increased so there would not be gross pay loss, and all in-service was on off-duty time. All these would be constraining items in the federal system but could be negotiated (see Appendix G).

Sellars (1973) addressed the 4-40 from the financial perspective only. The system implemented included all nursing personnel categories and all shifts on several units. The research was undertaken to determine if personnel costs were reasonable (not necessarily cheaper). Cost was addressed using four variables:

- (1) regular hours worked
- (2) total overtime hours worked
- (3) total vacation and holiday time
- (4) total absenteeism

The conclusion was "in no instance did the four day schedule appear to be responsible for any changes that would result in increased cost to the hospital."

In summary, the literature available demonstrates varied implementations of the four-day workweek, all of which are overwhelmingly positive both in objective measurements of quality of patient care with reduced absenteeism, overtime, and turnover, and in subjective attitudinal reports of staff and patient satisfaction. Of particular interest, when considering constraints experienced in the military system, was the reported flexibility of the system. Success was reported when single units within an institution implemented the system, even when only some staff on a given unit chose it. Thus, one could hypothesize that if civilian personnel practices are felt to constrain implementation, the military alone could restructure their work schedule or perhaps only the registered nurses or even a particular shift. The major advantage reported in all

references was the ability to "bunch" personnel during the times when they were most required and further to plan for performance of slighted essential services such as assessment, planning, and patient teaching during the time periods when maximum staffing occurred. Thus, each unit considering such a plan could evaluate peaks and valleys in their patient care requirements and staff accordingly. The ability to provide maximum nursing hours when the need exists, while reducing overtime required and improving time off, is certainly not a goal unique to civilian nursing. A 4-40 work schedule which most closely approximates the Shaw (1978) system is illustrated in Appendix C.

The 7-70 Work Schedule. A variant of the ten-hour day is the 7-70 implemented at a small hospital in the Northwest (Cleveland and Hutchins, 1974). The plan utilizes a ten-hour day, seven-day week, followed by seven consecutive days off. Two teams alternated weeks, Tuesday through Monday. All shifts were permanent with no rotation and there was no shift differential. Vacation and sick time were calculated in hours as described earlier. In order to comply with the Fair Labor Standards Act, paraprofessional staff (unit clerks and LPNs) work configuration was changed to insure no more than 40 hours were worked in one week. The RNs' plan (although RNs were exempt under Federal Law) did not comply with the State Nurses Associations Agreement, so a separate contract was drafted. Comparative data are not available for this plan since the hospital opened using this system. Reported advantages, however, were less than one-half the sick leave (2.04 days per person per year compared to five days) and turnover (9-10 percent per year compared to 25 percent) reported in their geographic area during the same time and 64 percent of the original 50 RNs hired received five year pins. Among tangible but unmeasurable benefits reported were more flexible daily routine for patients; improved communications among staff, patients, and physicians; greater continuity of care; more individualized care plans; very positive patient feedback; and highly motivated nurses. The 7-70 Plan was also

reported by other sources (Colt and Conley, 1974; DeMarsh and McLellan, 1972) which converted several units and reported similar positive results. A lack of continuity was mentioned as possible when complete turnovers occurred weekly.

There is structural difficulty to implementing a 7-70 system within the AMEDD since basic changes in personnel policies would be required. With the centralized civilian personnel system, the pay changes necessary for equity to both employee and the institution, would be difficult. However, such an alternative could be an equitable option for the active duty soldier with increased requirements for physical fitness training, field training, company responsibilities, and the absorption of holiday time.

The Twelve-Hour Option. There is less available literature on the 12-hour shift option as compared to 10-hour shifts; there were essentially two described. The first entailed seven consecutive days of 12 hours followed by seven days off. The second involved the same 12-hour day but divided into groups of three or four work-days with one to five days off in between. The major advantages cited were similar to those noted for the 7-70; however, disadvantages seemed much more apparent. Ganong, Ganong, and Harrison, and Cales (1976) each described programs which utilized the 12-hour, seven consecutive day schedule/seven days off. Ganong et al., had very positive results: better staff utilization which resulted in lower staff requirements and payroll savings, nursing man-hours for peak workload periods were not affected significantly, and staff perceptions that the advantages far outweighed the disadvantages. The schedule was developed in compliance with the Fair Labor Standards Act. This particular report followed four years of utilization. Cales (1976) reported the schedule's use on one unit and the tone was far less positive, but with the same bottom line--the advantages outweighed the disadvantages. The major disadvantages concerned fatigue and time spent away from home during the workweek. However, even though fatigue was cited as a factor at the end of the

day and end of the workweek, there was no correlation between these times and decreased productivity. Underwood (1975) reported the use of 12-hour shifts in an arrangement of four days as the longest period of work with a guaranteed six to seven consecutive days off every eight weeks. Yet another variation of the 12-hour compressed schedule reported by Hibberd (1973) described a schedule in which nursing staff worked six 12-hour shifts and one eight-hour shift in a two week period. A major advantage of this option was that it redistributed hours worked within a two week time period without adding hours as the twelve-hour/seven-day option must. A major advantage of the twelve-hour shift was reported as better utilization of nursing personnel resulting in lower requirements. Within the military community where hiring often lags behind the requirements or during periods where need and staff availability are not equal, this option could be a relief to double shifts and working extra days. With the additional requirements often found in the military system the problem of fatigue might prove more significant than in the civilian sector.

Appendices D and E illustrate two possible variations of the 12-hour shift. The first is generalized to all staff and utilizes an 80-hour/two-week period in which the staff member works a total of six 12-hour shifts plus one eight-hour shift. No member works more than four 12-hour shifts in a row although a total of five with eight-hour shifts is sometimes required. Secondly, a 12-hour option is illustrated for use by active duty military only. This option appears most appropriate in those institutions where an appreciable amount of overtime is required to meet patient care requirements. By increasing total hours worked by only four in two weeks, time off is greatly improved while the advantage of "bunching" staff can also be realized. Although, because of fewer personnel on this shift no 12-hour evening is utilized, the advantages could still be realized. The major problems of fatigue and time spent away from home during the work cycle would appear to be offset by advantages cited.

Other Combinations. The options reported in detail above are the most prevalent and those that appear easily adaptable to the AMEDD. There are others reported in the literature which could have value if constraints of current personnel management could be attenuated. There are programs which pay premium wages for weekend hours worked such as the "Baylor Plan" or the modified two day weekend plan. Another premium wage plan is the 7-56. Nurses work seven consecutive eight-hour nights with seven nights off and receive 10-15 percent less pay than standard 5-40 nurses but do receive all "fringe" benefits of the full time employees.

Other compressed or combinations of scheduling shifts reported are the 3-40; the 2-8s plus 2-12s; and the 4-6s plus 1-12. All of these scheduling alternatives emphasize flexibility for the employee while maintaining quality of patient services by the principle of "bunching." Also reported extensively, especially by Golembiewski, Yeager, and Hilles (1975), but not seen widely in nursing literature, is a particular modification of "flexitime" in which persons or organizations may set their own schedules while maintaining hours worked. A variation of this method sets "core" hours and allows personnel and organizations to arrange hours most convenient to self and work project. Flexitime has been tested in the federal sector (OPM Report, 1981) but was discontinued when productivity decreased.

6. SUMMARY. The nontraditional scheduling options reported here illustrate a wide variety of systems in use. Those reporting the data, in all instances, were overwhelmingly positive about increased staff morale, retention, and the subjective feelings of care providers' ability to render care. Conspicuously absent from these reports were negative findings, either objective or subjective, concerning quality of services or cost to provide those services. It is, however, necessary to view all results with caution. Most options are provided as management information rather than evaluation research; therefore, few models

supply the supporting data which scientific rigor requires for generalizability. This caveat does not suggest a need to dismiss the findings; it suggests a starting point for evaluation of nontraditional scheduling plans within an institution or system. Adequate data are not presented concerning design, baseline versus post evaluation, and long term follow-up even though some schedules have been unused for ten years.

All reports which discussed initial trials of nontraditional schedules agreed on the one essential factor for success, i.e., adequate staff preparation and coordination. Staff members involved must have an active part in the planning stages and all levels of administration must be involved and support the effort. Communication must continue throughout the trial period to include frequent meetings for discussion of problems and written evaluations from the staff. It is also suggested that such a trial should have a beginning and an end point. It should be clear that the decision to continue or not would be made from findings during the trial and all involved would have input to the decision.

#### 7. CONCLUSIONS.

- a. There are multiple scheduling options cited in the literature which are reported to increase staff satisfaction without negatively impacting on existing quality of nursing care.
- b. Many of the options available can be tested within the AMEDD system without structural change in personnel management.
- c. Civilian personnel policies do not preclude trial and or implementation within the AMEDD (see Appendix G).

#### 8. RECOMMENDATIONS.

- a. Make the findings of this report available to chief nurses at MEDDACS/MEDCENS.

b. Consult with HCSCIA staff concerning the possibility of an exportable package which could be made available to interested persons at Medical Treatment Facilities (MTF). The package could contain instruments for measurement of baseline and continuing data on satisfaction and quality of care. HCSCIA could also act as consultant for implementation, data collection and analysis, and publication of results.

9. REFERENCE LIST.

Alivizatos, M. S. A new concept in scheduling for nurses. Supervisor Nurse, Volume 12(2), February 1981, 20-22.

Bauer, J. Clinical staffing with a 10-hour day, 4-day, 4-day workweek. Journal of Nursing Administration, November-December 1971, 12-14.

Boyarski, R. P. Nursing workweek equalizes shifts, time off. Hospital Progress, Volume 57(7), July 1976, 36-37, 40; and 45.

Cales, A. D. A twelve-hour schedule experiment. Supervisor Nurse, Volume 7(6), June 1976, 71-76.

Cleveland, R. T., and Hutchins, C. L. Seven days vacation every other week. Hospitals, Volume 48, August 1974, 81-85.

Colt, A. M., and Conley, T. F. What nurses think of the 10 hour shift. Hospitals, Volume 48, February 1, 1974, 134-142.

DeMarsh, K. G., and McLellan, E. I. The 7-day fortnight - 18 months after. Hospital Administration in Canada, October 1972, 33-34.

Frasier, L. P. "The reconstructed workweek - one answer to the scheduling dilemmas." Journal of Nursing Administration, September-October 1972, 12-16.

Ganong, W. L., Ganong, J. M., and Harrison, E. T. The 12-hour shift: better quality, lower cost. Journal of Nursing Administration, February 1976, 17-29.

Ginsberg, E., Patsy, J., Ostow, M., and Brann, E. A. Nursing discontent: the search for realistic solutions. Journal of Nursing Administration, November 1982, 7-11.

Golembiewski, R. T., Yeager, S., and Hilles, R. Factor analysis of some flexitime effects: attitudinal and behavioral consequences of a structural intervention. Academy of Management Review, Volume 18, September 1975, 500-509.

Hibberd, J. M. 12-hour shifts for nursing staff: A field experiment. Hospital Administration in Canada, January 1973, 26-30.

Institute of Medicine. Six month interim report by the Committee of the Institute of Medicine for a study of nursing and nursing education. National Academy Press, Washington, D.C. July 1981, 1-44.

Kent, L. A. The 4-40 workweek on trial. American Journal of Nursing, Volume 72(4), April 1972, 683-686.

McDonald, F. G. A study of factors affecting retention of civilian RNS in the AMEDD. Graduate Study, Baylor University Health Care Administration Course, August 1982.

National Commission on Nursing. Initial report and preliminary recommendations. American Hospital Association, Chicago, Illinois. September 1981, 1-80.

Nurse task force guides flexible scheduling program. Hospitals, August 1981, 60-61.

New study reports why Massachusetts nurses drop out. American Journal of Nursing, January 1983, 9; 136; 138; and 144.

Sellers, T. V. The 4/40: does it raise personnel costs? Hospitals, Volume 47, September 1, 1973, 94-101.

Shaw, P. The 10-hour day in the four day week. Supervisor Nurse, Volume 9(9), October 1978, 47-56.

Underwood, A. What a 12-hour shift offers. American Journal of Nursing, Volume 75(7), July 1975, 1176-1178.

United States Office of Personnel Management. Alternative work schedules experimental program interim report to the President and the Congress, September 1981.

Wandelt, M. A., Hales, G. D., Merwin, C. M., Olsson, N. G., Pierce, P. M., and Widdowson, R. R. Conditions associated with registered nurses employment in Texas. Center for Research, School of Nursing, University of Texas at Austin, 1980, 1-268.

## APPENDICES

## Appendix A

### Illustrative Schedule - Conventional Schedule 5 Days/8 Hours

The schedule for a typical 8 week period allows for one holiday plus a total of three weeks leave for professional staff and four weeks leave for the para-professional staff. The schedule is for illustration and comparison only. It was constructed as projected schedules are constructed in the service setting--by a nurse sitting down with paper and pencil with certain requirements in mind. Therefore, the schedule is not presented as ideal but rather as one possible solution by one professional nurse.

Abbreviations/codes appearing on these illustrative schedules are:

1 - Day Shift

2 - Evening Shift

3 - Night Shift

D

O - Day off

H

T - Holiday Time

L

V - Leave

**SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING**  
**Conventional Schedule (5 x 8)**  
**(Professional)**

TEAM VALUES

Days	13.6	24.2%
Evenings	15.3	27.3%
Nights	8	14.3%
Off	18.9	33.7%
Weekends	2 plus/person	
Longest stretch	7 shifts	

## **SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING**

**Conventional Schedule (5 x 8)**  
**(Paraprofessional)**

Weekends 2/person	Lowest stretch 8 shift
Evenings	10.5
Nights	10.2
Off	18.5
	32.9%

## MEAN VALUES

Days	17	30. 3%
Evenings	10. 5	18. 6%
Nights	10. 2	18. 2%
Off	10. 5	22. 9%
		Weekends 2/person
		Longest stretch @ stretch

## Appendix B

### Illustrative Schedule - Conventional Schedule 5 Days/8 Hours

#### Each Staff Member Working Two Shifts

The schedule for 8 weeks allows for one holiday plus a total of three weeks leave for professional staff and four weeks leave for the paraprofessional staff. Each staff member rotates only two shifts rather than three. Mean values are therefore presented for days worked, shift or time worked by other than day shift and off time.

Abbreviations/codes appearing on these illustrative schedules are:

1 - Day Shift

2 - Evening Shift

3 - Night Shift

D

0 - Day Off

H

T - Holiday Time

L

V - Leave

## SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING (Normal Staffing - 2 Shifts) (Professional)

SHIRT 1 STRONGER  
SHIRT 2 STRONGER  
SHIRT 3 STRONGER

## MEAN VALUES

Days	14.1	25.2*
Shift	23.1	41.3*
Off	18.7	32.5*

Workers 2.5/person  
Longest stretch 8 shift

## **SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING**

**5 X 8 (2 Shifts)**  
**(Paraprofessional)**

<u>MEAN VALUES</u>	
Days	17.4
Shift	20
Off	18.5
Households	3/person
Largest stretch	

## Appendix C

### Illustrative Schedule - 4 Days/10 Hours

The schedule for 8 weeks allows for one holiday plus a total of three weeks leave for professional staff and four weeks leave for the paraprofessional staff. For management continuity the Head Nurse and Wardmaster remain on conventional 5 days/8 hours schedule.

Abbreviations/codes appearing on these illustrative schedules for all personnel (except the Head Nurse and Wardmaster) are:

- 1 - 10 Hour Day Shift (0645 - 1715)
- 2 - 10 Hour Evening Shift (1234 - 2315)
- 3 - 10 Hour Night Shift (2115 - 0745)

D

O - Day Off

H

T - Holiday Time

L

V - Leave

**SHIFT 1 STRENGTH**

IN DEPARTMENTS OF NURSING  
10/4  
professional)

## MEAN VALUES

Days	12	21.1x
Evenings	8.9	15.8x
Nights	8	14.2x
Off	27	49.2x
Weekends 4/person		
Longest stretch 7 shifts		

# SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING 10/4 (Paraprofessional)

10/4  
(Paraprofess)

Weekends 4/person  
Luncheon stretch 6 shifts

## Appendix D

### Illustrative Schedule - 80 Hours/Weeks Distributed as Six 12-Hour Shifts Plus One 8-Hour Shift

The schedule for 8 weeks allows for one holiday plus a total of 3 weeks leave for professional staff and four weeks leave for the paraprofessional staff. For management continuity the Head Nurse and Wardmaster remain on conventional 5 days/8 hours schedule.

Abbreviations/codes appearing on these illustrative schedules are:

1 - 8 Hour Day Shift (0700 - 1530)

2 - 8 Hour Evening Shift (1500 - 2330)

D - 12 Hour Day Shift (0700 - 1930)

E - 12 Hour Evening Shift (1100 - 2330)

N - 12 Hour Night Shift (1900 - 0730)

D

O - Day Off

H

T - Holiday Time (replaces an 8-hour shift only)

L

V - Leave

**SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING**  
**6 X 12 + 1 X 8½ Weeks**  
**(Professional)**

## MEAN VALUES

Days	10.7
Evenings	6.9
Nights	8
Off	30.6
Weekends	5/person
Longest stretch	4 x 1

Longest scratch 4 x 12 + 1 x 8

**SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING**  
6 X 12 + 1 X 8/2 Weeks  
(Paraprofessional)

### תומך מקצועי (Paraprofessional)

## MEAN VALUES

Days	11.6	20.8%
Evenings	9.1	15.2%
Nights	5.1	9.1%
Off	29.9	53.4%
Weekends & plus/person		
Longest stretch 4x 12+		

## Appendix E

### Illustrative Schedule - Two Week Period

Active Duty Staff Works Seven 12-Hour Shifts (84 Hours)

Civilian Staff Works Conventional 5 Days/8 Hours

The schedule for 8 weeks allows for one holiday plus a total of three weeks leave for professional staff and four weeks leave for the paraprofessional staff. For management continuity the Head Nurse and Wardmaster remain on conventional 5-day/8-hour schedule.

Abbreviations/codes appearing on these illustrative schedules are:

1 - 8 Hour Day Shift

2 - 8 Hour Evening Shift

3 - 8 Hour Night Shift

D - 12 Hour Day Shift (0700 - 1930)

N - 12 Hour Night Shift (1900 - 0730)

D

O - Day Off

H

T - Holiday Time

L

V - Leave

**SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING**  
12 X 7 (AN Only)  
(Professional)

## HEALTH VALUES

AMC	Days	Nights	Off	CIVILIAN	Days	Events	Nights	Neckbands /person	Longest stretch 7 shifts
	13.5	24.1	x		19			33.9%	
	11.7	21.5				15.7		26%	
	30.75	54.9%				3		5.45	

**SCHEDULING OPTIONS IN DEPARTMENTS OF NURSING**  
**12 X 7 (Active Only)**  
**(Paraprofessional)**

## MEAN VALUES

ACTIVE	14.8
INACTIVE	30.2
NON- MEMBERS	53.6%
NON- MEMBERS	20.4%
NON- MEMBERS	26.4%

driving	days	17.7	31.5%
driving	evenings	10.3	18.4%
driving	nights	9.3	16.7%
driving	off	19	34%
			weekend 2/person
			stretch 7 stretch 3

## **Appendix F**

### **Comparison Graphics Among Scheduling Options**

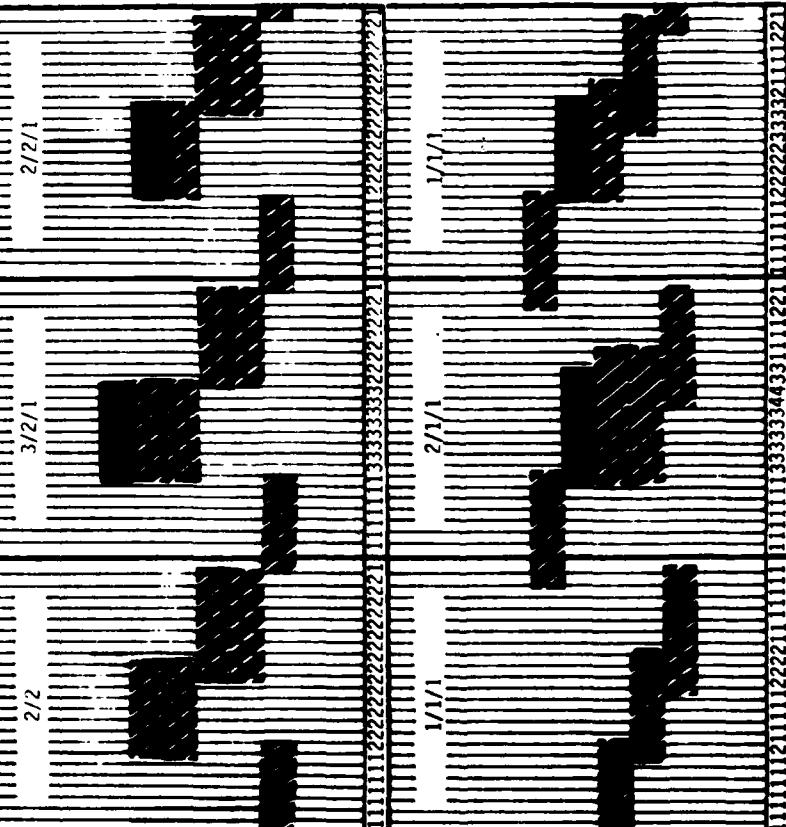
## COMPARISON OF SCHEDULING OPTIONS - PROFESSIONAL

CONVENTIONAL SCHEDULING  
2 SHIFTS  
8 HOUR/5 Days

8 Hour/S Days  
2 Shifts  
Scheduling  
Conventional

**# ON DUTY EACH HOUR**

35



10 Hour/4 Days

1 ON DUTY EACH HOUR

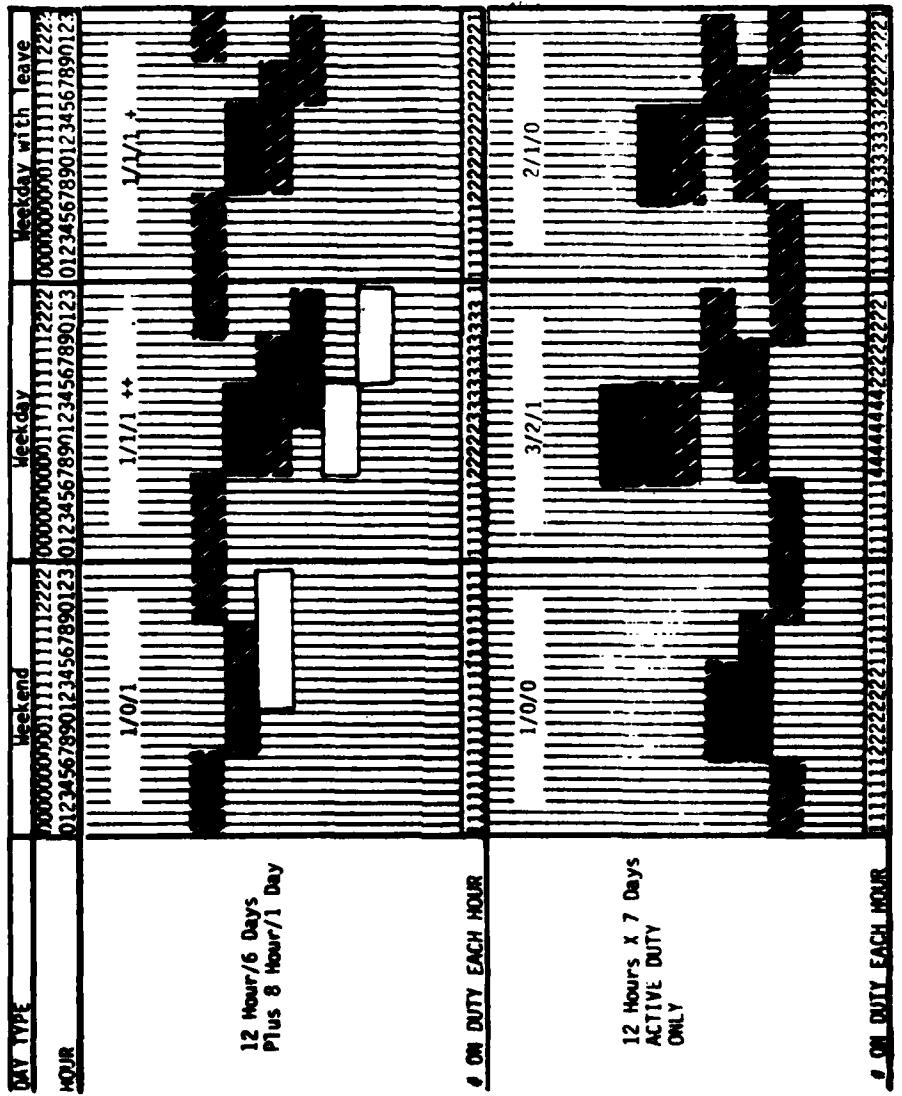
<u>MEAN VALUES</u>	
Days	13.6
Evenings	15.3
Nights	8
Off	18.9
Weekends	2 plus/person
Longest stretch	7 shifts

Days	14.1	25.2%
Shift	23.1	41.3%
Off	18.7	33.5%
Weekends	2.5/person	
Longest stretch	8 shifts	

Days	12	21.1%
Evenings	8.9	15.8%
Nights	8	14.2%
Off	27	48.2%
Weekends	4/person	
	Longest stretch	7 shifts

LEGEND  HEAD NURSE  OTHER RN'S

COMPARISON OF SCHEDULING OPTIONS - PROFESSIONAL (Continued)



## COMPARISON OF SCHEDULING OPTIONS - PARAPROFESSIONAL

MEAN VALUES

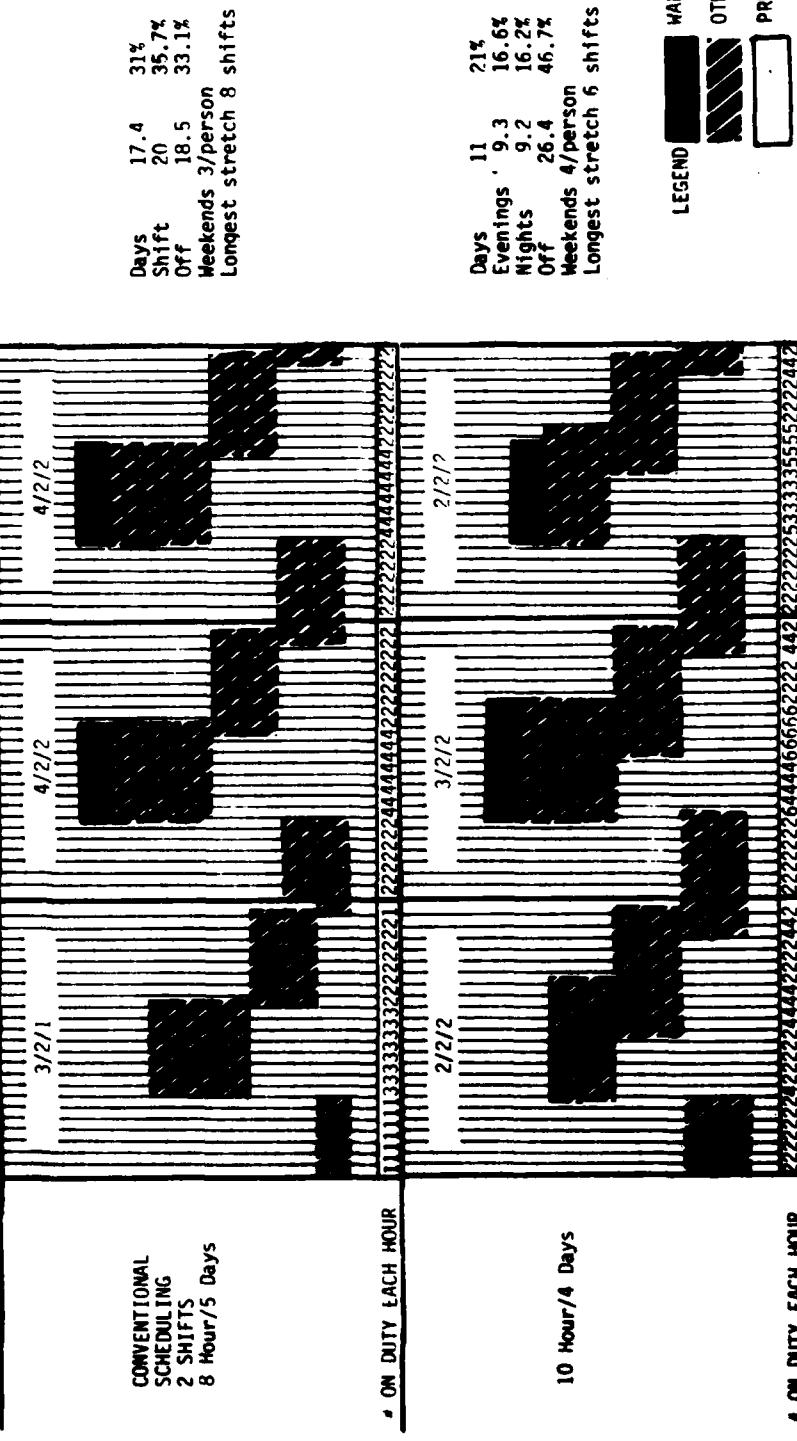
Day	Weekday	Weekend	3/2/2	5/2/2	4/2/2	Weekday with leave
Days	17	30.3%				
Evenings	10.5	18.6%				
Nights	10.2	18.2%				
Off	18.5	32.9%				
Weekends 2/person						
Longest stretch R shifts						

DAY TYPE

HOUR

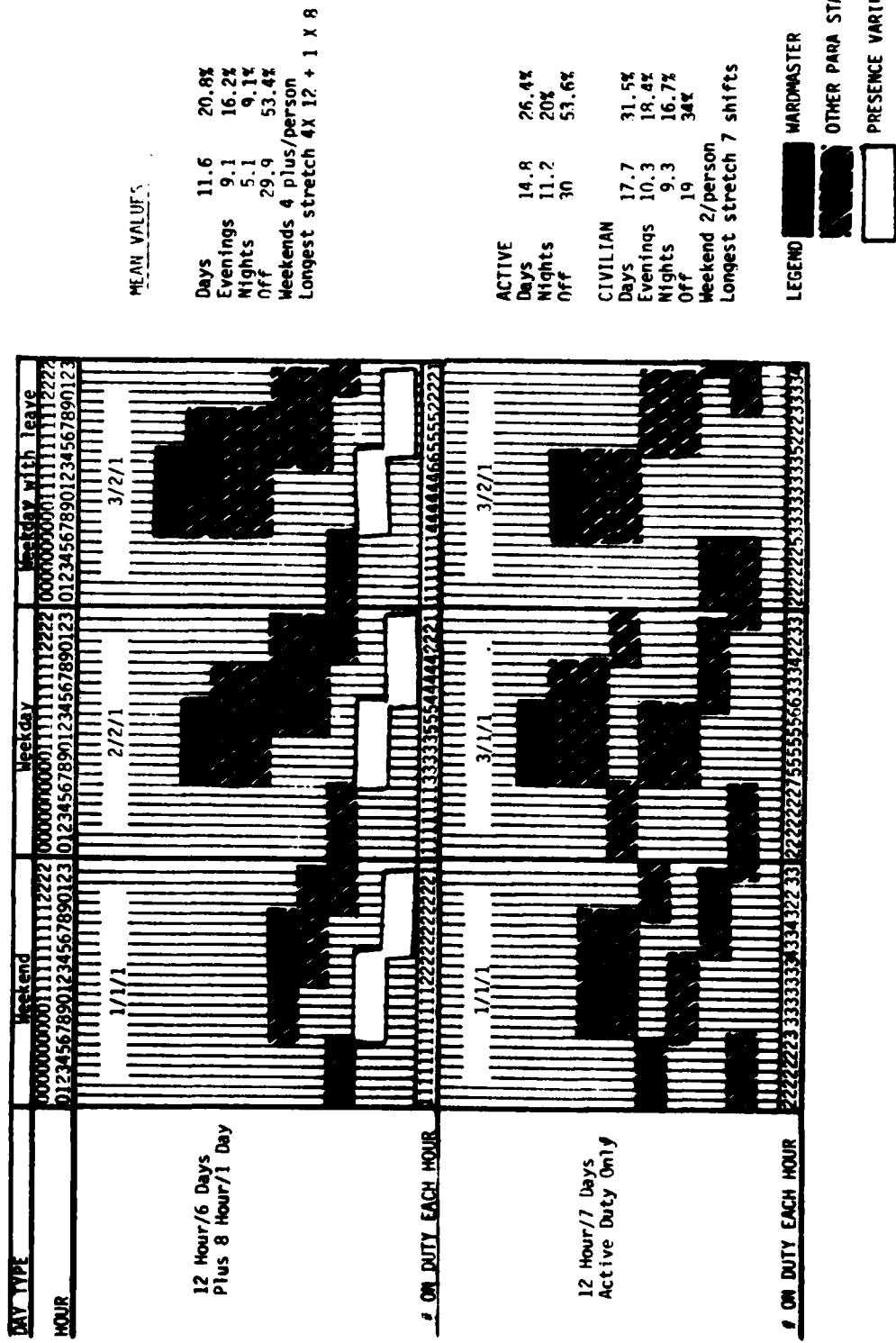
CONVENTIONAL SCHEDULING  
3 SHIFTS  
8 Hour/5 Days

# ON DUTY EACH HOUR



37

## COMPARISON OF SCHEDULING OPTIONS - PARAPROFESSIONAL (Continued)



**Appendix G**

**HSC Information Paper**  
**Alternative Work Schedules and Flexitime**

Appendix G  
INFORMATION PAPER

HSPE-CM  
1 March 83

**SUBJECT: Alternative Work Schedules and Flexitime**

**ISSUE: Approval and Record Keeping Requirements**

**FACTS:**

1. The use of flexitime is authorized for civilian employees within HSC. Flexitime is governed by chapter 610, Federal Personnel Manual, and Civilian Personnel Regulation 990-2, chapter 610. There is no requirement that prior approval be requested from HQ HSC when local commanders decide to implement flexitime. However, it should be pointed out that flexitime differs from alternative work schedules (AWS). Flexitime consists of core time (when the employee must be at work) and flexible time (that portion of the workday where the employee can vary starting and quitting times) which do not exceed an 8-hour workday and 40-hour workweek. Flexitime is established under existing laws and regulations and any overtime worked is compensable.
2. Alternative work schedules are established under P.L. 97-221, Federal Employees Flexible and Compressed Work Schedules Act of 1982. Compressed work schedules (80 hour biweekly basic work requirement scheduled for less than 10 days) and flexible schedules (schedules which include core time, flexible time, and accumulation of credit hours to be used to decrease another workweek or workday) established under P.L. 97-221 provide for a waiver of normal premium pay requirements. AWS must be approved by HQ HSC as provided in HSC letter, HSPE-CM, 8 September 1982, subject: Continuation of Alternative Work Schedules. Establishment of AWS must be consistent with collective bargaining obligations. Negotiated AWS, like negotiated agreements, must be provided to HSC for post-audit review and approval. The information at Inclosure 1 should be provided when requesting approval of AWS.
3. HSC activities are required to maintain records pertaining to AWS programs previously established under the experimental program, as well as for new programs approved under P.L. 97-221. These records should provide up-to-date accurate information regarding AWS and should include data on the number of AWS programs, types of schedules in use, number of employees covered by each type of schedule, reasons for termination of schedules, and any other pertinent information used for evaluation. This information will be needed to meet anticipated HQ DA/OPM reporting requirements.

4. There is no provision in Army regulation which provides for active duty military personnel to participate in flexible or AWS. Neither is there, to our knowledge, any specific prohibition. FPM 610, CPR 610, and P.L. 97-221 specifically apply to civilian employees. However, it is recognized that commanders have broad latitude in establishing the work schedules for active duty military personnel. Therefore, whenever practicable, commanders should consider including military personnel in flexitime and AWS which are established for civilian employees as long as mission and operations are not adversely affected. Such practices help develop the "team" concept and reduce morale problems.

1 Incl  
as

GS-12 GRAY/471-6615

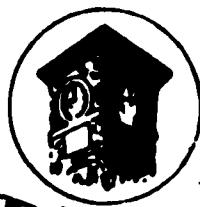
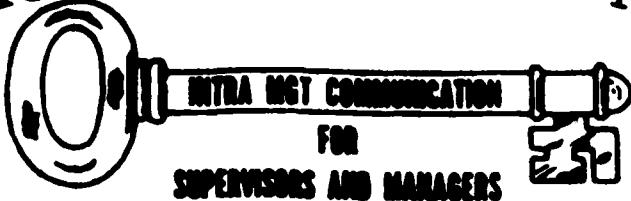
FORMAT FOR REPORTING NEW/EXISTING  
ALTERNATIVE WORK SCHEDULES (AWS)

1. Name and address of organization.
2. Point of contact and telephone number.
3. Proposed/actual start date for AWS.
4. Was AWS experimental program under PL 95-390, or new start under PL 97-221?
5. Number of employees covered by AWS.
6. Narrative description of major functions/activities of organization.
7. Was AWS proposed by management or union?
8. Which union negotiated AWS and was impasse reached?
9. Description of work schedule prior to AWS.
10. Description of existing/proposed AWS.
11. Time accounting procedures used.
12. Benefits gained/anticipated.
  - a. Efficiency of government operations (i.e. employee productivity, leave usage, turnover, overtime hours, job satisfaction, morale, etc.).
  - b. Mass transit, traffic, car pools.
  - c. Levels of energy consumption.
  - d. Service to the public.
  - e. Increased opportunity for full/part time employment.
  - f. General effects on individuals and families (scheduling, child care, recreation, etc.).
13. Existing/anticipated special problems (requests for exemption, leave/pay administration, overtime scheduling, staffing problems, etc.) not rising to the level of "adverse agency impact" as defined by 5 USC 6131(b).
14. Projected/experienced adverse agency impact.
15. Other comments, findings, experiences, or evaluations deserving of discussion.



# CIVILIAN PERSONNEL

## MESSAGES AND KEY NOTES



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IT IS NOT FOR GENERAL DISTRIBUTION OR POSTING ON BULLETIN BOARDS.

NUMBER 18-83

13 June 1983

### PART-TIME CAREER EMPLOYMENT

1. The Federal Employees Part-Time Career Employment Act of 1978 (P.L. 95-437) promotes the expansion of career part-time employment opportunities in the Federal service. The law requires agencies to establish programs to expand career part-time opportunities in the workforce.
2. Permanent part-time employees are not counted against full-time permanent employment ceilings, but are included in the total employment ceiling of an activity. Part-time employees are counted as a fractional part of the 40-hour week; for example, a 20-hour per week employee would be considered as one-half of an authorization. This new method can be useful in reallocating full-time resource requirements to meet needs while still accomplishing work that could be done on a less than full-time basis. Those activities which have allocated TPT spaces, and do not have actual need for temporary fill, should consider covering those spaces and funds by part-time employees.
3. A copy of a general information sheet about part-time employment is attached. The Department of the Army has established an operating objective of hiring one part-time career employee per 80 full-time employees.
4. Development of part-time employment programs must begin with a review of existing positions and work requirements. Your assistance is requested in identifying work situations that may lend themselves to conversion to part time. Supervisors and managers should coordinate with their Force Development Activities to assure that conversion of a position to part time is in accordance with current guidance.

(R & P Branch, 221-5343)

*Mary C. Etlinger*  
MARY C. ETLINGER  
Civilian Personnel Officer

## GENERAL INFORMATION: PART-TIME EMPLOYMENT PROGRAM

### 1. Definitions.

a. **Career employment:** Permanent employment in tenure groups I or II. This includes employees serving on career, career-conditional, VRA, excepted, or excepted-conditional appointments.

b. **Temporary employment:** Employment under any appointment during which the employee is not in tenure groups I or II; includes temporary NTE, term NTE, TAPER, or any other nonpermanent employment.

c. **Full-time employment:** Regularly scheduled employment of 40 hours per week.

d. **Part-time employment:** Regularly scheduled employment of between 16 and 32 hours per week.

e. **Intermittent employment:** Employment with no regularly scheduled tour of duty; the employee is called to work as needed.

### 2. Objectives of the Part-Time Program.

a. Increase productivity and demonstrate commitment as a concerned employer.

b. Expand the number and scope of career part-time employment opportunities to include professional, administrative, technical, clerical, crafts, trades, and other occupations.

c. Provide an additional management device to support the achievement of equal employment objectives.

d. Encourage the elimination of artificial constraints which inhibit expansion of career part-time employment.

3. **Coverage.** The part-time program applies to all civilian occupations and positions in grades GS-15 or below (or equivalent). Excluded from coverage are:

a. Positions which consist of annually recurring periods of full-time, part-time, or intermittent employment.

b. MACOM-approved exceptions due to mission requirements.

c. Temporary or intermittent employees.

4. Restrictions.

a. No positions may be established with a tour of duty of less than 16 or more than 32 hours per week. Temporary increases beyond 32 hours to meet workload or training requirements are permitted.

b. No position occupied by a full-time employee will be abolished to make the duties available on a part-time basis, nor will any full-time employee be required to accept part-time employment as a condition of continued employment.

5. Employment Ceilings.

a. Authorizations of career part-time employees are counted as a fraction which is determined by dividing 40 hours into the number of hours of the part-time employee's regularly scheduled workweek.

b. Part-time employees are not counted as part of full-time permanent ceilings (FTP); they are counted against total employment ceilings as described in para 5a.

6. Leave.

a. Annual leave is earned on a prorated basis depending on the employee's leave category. It does not affect the amount an employee may carry over into the next leave year.

b. Sick leave is earned at the rate of 1 hour for every 20 hours in pay status.

c. Part-time employees are eligible for military leave on a prorated basis.

d. Holidays are granted if they are regularly scheduled work days.

7. Employee Benefits.

a. Career part-time employees receive full civil service retirement credit.

b. Career part-time employees are eligible for coverage under the Federal Employee's Group Life Insurance Program.

c. Career part-time employees are eligible for coverage under the Federal Employees Health Benefits Program. However, the government pays only a prorata share of its contributions (one-half time, one-half of government's contribution). The remainder is paid by the employee.

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